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NOVEL VECTORS IN AVIAN TRANSGENESIS

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This application is a continuation of Application No. 09/173,864, filed October 16, 1998, now U.S. Pat. No. 6730822 which claims the benefit of U.S. Provisional Application No. 60/062,172, filed October 16, 1997.

BACKGROUND OF THE INVENTION

a) Field of the Invention

The present invention relates to vectors and methods for the introduction of exogenous genetic material into avian cells and the expression of the exogenous genetic material in the cells. The invention also relates to transgenic avian species, including chickens, and to avian eggs which contain exogenous protein.

b) Description of Related Art

Numerous natural and synthetic proteins are used in diagnostic and therapeutic applications; many others are in development or in clinical trials. Current methods of protein production include isolation from natural sources and recombinant production in bacterial and mammalian cells. Because of the complexity and high cost of these methods of protein production, however, efforts are underway to develop alternatives. For example, methods for producing exogenous proteins in the milk of pigs, sheep, goats, and cows have been reported. These approaches suffer from several limitations, including long generation times between founder and production transgenic herds, extensive husbandry and veterinary costs, and variable levels of expression because of position effects at the site of the transgene insertion in the genome. Proteins are also being produced using milling and malting processes from barley and rye. However,